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Acute Coronary Syndromes

OPTIMIZING P2Y12-RECEPTOR INHIBITION IN ACUTE CORONARY SYNDROME PATIENTS BASED ON PLATELET FUNCTION TESTING: IMPACT OF PRASUGREL AND HIGH-DOSE CLOPIDOGREL

Poster Contributions
Hall C
Sunday, March 30, 2014, 3:45 p.m.-4:30 p.m.

Session Title: Acute Coronary Syndromes: Treatment Considerations
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Background: The clinical value of prasugrel in ACS patients with high platelet reactivity (HPR) is unknown. We aimed to investigate the impact of administration of prasugrel or high-dose clopidogrel based on platelet function testing in acute coronary syndrome (ACS) patients undergoing PCI.

Methods: Clopidogrel pretreated ACS patients undergoing successful PCI were enrolled in a single-center, prospective registry. Platelet function was measured 12-36 hours after PCI with the Multiplate platelet function device. Patients with HPR (>46U) were switched to prasugrel or were treated with high-dose clopidogrel, while those without HPR continued 75 mg clopidogrel. High-dose clopidogrel was administered as repeated loading doses of 600 mg up to 4 times, proposed by Bonello and colleagues.

Results: Between September 2011 and August 2012, 741 consecutive patients were enrolled of whom 219 (30%) had HPR. Although platelet reactivity significantly decreased in response to treatment adjustments in groups with HPR, prasugrel showed significantly more potent platelet inhibition than high-dose clopidogrel both after loading dose and the during maintenance phase ($p<0.0001$). Compared to patients without HPR, the risk of all-cause death, myocardial infarction, stent thrombosis or stroke at one year was significantly higher in the high-dose clopidogrel group (HR: 2.27[1.45-3.55], $p<0.0001$), while patients switched to prasugrel had similar outcomes (HR: 0.90[0.44-1.81], $p=0.76$). BARC type 3/5 bleeding was also higher with high-dose clopidogrel (HR: 2.09[1.05-4.17], $p=0.04$), but not for patients switched to prasugrel (HR: 0.45, [0.11-1.91], $p=0.28$). In multivariate model, HPR with high-dose clopidogrel, but not with prasugrel was an independent predictor of the composite ischaemic endpoint (HR: 1.90[1.17-3.08], $p=0.01$).

Conclusions: Switching ACS patients with HPR to prasugrel reduces thrombotic and bleeding events to a level similar to those without HPR; however, using high-dose clopidogrel results in higher risk for both thrombotic and bleeding complications.